

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

July 22, 1985

Mr. James M. Taylor, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Taylor:

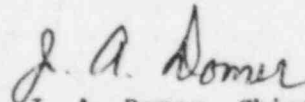
As a result of telephone conversations with members of NRC Region II Staff, enclosed is a revised response to J. Nelson Grace's May 7, 1985 letter to H. G. Parris which transmitted the Proposed Civil Penalty Action: EA 84-119, Unit 1 Seal Table Leak and Thimble Tube Ejection Event (reference IE Inspection Report No. 50-327/84-24 dated March 7, 1985), for our Sequoyah Nuclear Plant. Our previous response was submitted to you by my June 6, 1985 letter.

If you have any questions, please call R. E. Alsup at FTS 858-2725.

To the best of my knowledge, I declare the statements contained herein are complete and true.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



J. A. Domer, Chief
Nuclear Licensing Branch

Enclosure

cc: U.S. Nuclear Regulatory Commission (Enclosure)
Region II
Attention: Dr. J. Nelson, Grace, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

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ENCLOSURE
REVISED RESPONSE TO NOTICE OF VIOLATION AND
PROPOSED IMPOSITION OF CIVIL PENALTIES: EA-119,
UNIT 1 SEAL TABLE LEAK AND THIMBLE TUBE EJECTION EVENT
(REFERENCE: INSPECTION REPORT 50-327/84-24)
SEQUOYAH NUCLEAR PLANT

Violation 50-327/84-24-01

1. Technical Specification 6.8.1 requires the licensee to establish, implement, and maintain procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978. Items 1.c, 1.e., 1.i., 7.e(1) and 9 of Regulatory Guide 1.33 specify that procedures are required for equipment control, procedure review and approval, access to containment, access control to radiation areas including a radiation work permit system, and performing maintenance, respectively.

Contrary to the above, the licensee failed to establish and implement adequate procedures for the conduct of equipment control, procedure review and approval, performance of maintenance, radiation work permit access control, and access to containment. Examples of these failures are cited below:

- a. On April 19, 1984, maintenance procedure SMI-0-94-1 for instrument thimble tube cleaning and flushing was not implemented in that Step 1.1 of the procedure forbids use of the thimble cleaning system at power and cleaning activities were performed with unit 1 at 30 percent power. The procedure established at that time was inappropriate for use at elevated reactor coolant system pressures and temperatures.
- b. Maintenance procedure SMI-0-94-1 was inadequately established when issued on July 10, 1981, in that it contained no initial conditions and no post-maintenance inspection or quality assurance requirements for the thimble tube high pressure seals which constitute a reactor coolant pressure boundary.
- c. Maintenance request implementing procedures for control and review of maintenance activities associated with Maintenance Request (MR) A-238084 dated April 18, 1984, was not implemented in that:
 - (1) MR A-238084 did not delineate the applicable sections of SMI-0-94-1 to be performed and thus provided inadequate work instructions,
 - (2) MR A-238084 did not delineate requirements associated with the job safety analysis as required by procedure SQM2, Maintenance Management System,
 - (3) MR A-238084 did not reference the incore instrument disassembly/reassembly instructions of Maintenance Instruction 1.9, and

- (4) as of April 19, 1984, the Field Quality Engineering review of MR A-238084 did not identify the deficiency of (a) above and did not identify that the post-maintenance testing and quality assurance requirements referenced in MR A-238084 did not exist.
- d. Administrative Instruction -8, Access to Containment, was not adequately established as of April 19, 1984, in that:
- (1) no guidance or positive controls are delineated in the procedure to ensure that airlocks remain accessible for egress during activities in containment in Modes 1 through 4 or to ensure that workers are kept informed of changes in available egress routes and
 - (2) paragraph 2.4 did not clearly delineate those maintenance activities on the incore flux monitoring system for which the clearance on the incore flux drive motors could be removed; this resulted in incore detector system disassembly activities being performed without the appropriate clearance in effect.
- e. Administrative Instruction -3, Clearance Procedure, paragraph 5.1.4, requires that no work begin on equipment under clearance until the clearance is issued to the person responsible for the work. This requirement was not properly implemented in that as of April 19, 1984 the clearance for the incore detector drive motors covering thimble tube cleaning activities was issued to a member of the operations staff and not to a field services supervisor responsible for the cleaning activity.
- f. Radiation Work Permit 02-1-00102 issued January 1, 1984, for seal table area inspection and maintenance required workers to verify the presence of a clearance on the incore instrument probes prior to entering the containment lower compartments and annulus. This requirement was not implemented on April 18 and 19, 1984, by workers entering the seal table area in that the clearance was not in effect on the problems during work activities.

This is a Severity Level III violation (Supplement I). (Civil Penalty - \$37,500)

TVA Response

1. Admission or Denial of the Violation

TVA admits the violation occurred as stated.

2. Reasons for the Violation if Admitted

The violation resulted from the fact that adequate procedures were not established and existing procedures were not implemented for the control of maintenance activities associated with the unit 1 moveable detector system.

3. Corrective Steps Taken and Results Achieved

The following steps have been taken to correct the failures as identified in the subject deviation:

- a. Special Maintenance Instruction (SMI)-0-94-1 has been cancelled and replaced with Maintenance Instruction (MI)-1.10 "Incore Flux Thimble Cleaning and Lubrication" incorporating lessons learned in thimble tube cleaning incident.
- b. SMI-0-94-1 has been cancelled and replaced with MI-1.10. MI-1.10 contains the applicable initial conditions to be met, postmaintenance inspections to be done, and quality assurance requirements (hold point) for the thimble tube high pressure seals. In addition, the incore thimble tube maintenance has been included in the outage scheduling process.
- c. A review of the maintenance request (MR) process and QA review process has been performed to ensure they meet the requirements of SQM-2 "Maintenance Management System." As a result of this review the following adjustments have been made to upgrade the QA review program:
 - (1) Initial MR review has been restricted to QA engineers, management personnel (M-3 or above), or individuals designated by the section supervisors. Designated individuals must contact a QA engineer for concurrence prior to approving an MR.
 - (2) Additional training has been provided to those personnel authorized to review MRs. The training included the following:
 - a. Review of SQM-2 requirements for MR reviews.
 - b. Review of requirements for identifying postmaintenance testing for each MR.
 - c. Review of Quality Assurance Section Instruction Letter detailing MR review process (QA-SIL 5.3).
 - (3) The Quality Assurance Section Instruction Letter, which provides guidelines for review of maintenance request, was revised to update systems and components requiring postmaintenance testing.
- d. Administrative Instruction (AI)-8, "Access To Containment," has been revised to clarify hold order requirements for maintenance on the moveable detector system and to ensure operability of personnel airlock communications.
- e. Sequoyah Nuclear Plant (SQN) personnel have been instructed to ensure the person responsible for work is on the clearance (hold order) prior to commencing work per AI-3, "Clearance Procedure," requirements. This has been accomplished by including the AI-3 requirements in pre-outage briefing, periodic management safety meetings, and by use of the existing clearance procedure training classes.

- f. The Radiation Work Permit (RWP) procedure and RWP cover sheet have been revised to require the RWP timesheet to be removed when incore probes are in use. AI-8 also contains requirements for having RWP timesheet approved and in place for maintenance activities on the moveable detector system.

4. Corrective Steps Taken to Avoid Further Violations

See item 3 above for details.

5. Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

Violation 50-327/84-24-02

2. Technical Specification 6.5.1.6 requires that the Plant Operations Review Committee review unit operations to detect potential nuclear safety hazards and review all procedures required by Technical Specification 6.8.1.

Contrary to the above, these requirements were not implemented in that the Plant Operations Review Committee:

1. did not meet and review the operational hazards associated with thimble tube cleaning activities to be conducted in containment with the unit at power on April 19, 1984, and
2. did not adequately review maintenance procedure SMI-0-94-1 for thimble tube cleaning and flushing on July 10, 1981, as evidenced by the deficiencies identified in violation 1.(b) above.

This is a Severity Level III violation (Supplement I). (Civil Penalty - \$37,500)

TVA Response

1. Admission or Denial of the Violation

TVA admits the violation occurred as stated.

2. Reason for Violation

The violation occurred due to personnel error in that the hazards associated with cleaning the thimble tubes at power were not recognized. Consequently, the Plant Operations Review Committee (PORC) did not convene and review this activity prior to performance.

3. Corrective Steps Taken and Results Achieved

- a. The PORC is performing more indepth detailed reviews of procedures and activities to ensure compliance with established plant requirements. Additionally plant management personnel who serve as members of PORC have reviewed the duties and responsibilities of PORC, as identified in Technical Specification Section 6.5.1.6 and Sequoyah Standard Practice SQA-21, "Onsite Independent Review (Plant Operations Review Committee)."
- b. AI-4 Requirements for PORC review of plant instructions will be followed for plant activities.

4. Corrective Steps Taken to Avoid Further Violations

See item 3 above for details.

5. Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

Violation 50-327/84-24-03

3. 10 CFR Part 50, Appendix B, Criterion II requires that activities affecting quality shall be accomplished under suitably controlled conditions which includes the use of appropriate equipment. In addition, Criterion III requires that appropriate measures be established for the selection and review for suitability for the application of equipment.

Contrary to the above, as of April 19, 1984, the modified incore flux monitoring system thimble cleaning tool used for thimble cleaning activities at power was not appropriate equipment for use on the reactor coolant pressure boundary in that excessive stresses were transferred to the high pressure seal on incore thimble D-12. This resulted in a breach of the reactor coolant pressure boundary. In addition, management controls for and reviews of modifications to the original vendor-supplied cleaning tool were inadequate to prevent inappropriate modification of the tool and subsequent use.

This is a Severity Level III violation (Supplement I). (Civil Penalty - \$37,500)

TVA Response

1. Admission or Denial of the Violation

TVA admits the violation occurred as stated.

2. Reason for the Violation

The violation occurred due to inadequate management controls being established to ensure modifications to "special tools" received appropriate reviews and approvals to prevent unauthorized modifications and use.

3. Corrective Steps Taken and Results Achieved

Sequoyah Nuclear Plant has evaluated the need for establishing a program to control the use and modification of "special tools." As a result of this evaluation, SQN Standard Practice SQM 63, "Special or Modified Tooling-Primary System," has been issued outlining the requirements to be followed for the use and modification of "special tools." In general, special tools used on equipment fitting the following criteria fall within the scope of SQM 63:

- a. Components which are in service, pressurized or energized.
- b. Components which, if the tool caused failure of the component, could cause loss of primary coolant or the loss of uncontrollable amounts of radioactive contaminated water during the use of the tool.
- c. Components which, if the tool caused failure of the component, could cause the loss of a safety function while the tool is being used.

This instruction may also be used to document evaluations of other tools as requested for reasons such as industrial safety considerations.

4. Corrective Steps to Avoid Further Violations

See item 3 above for details.

5. Date When Full Compliance Will Be Achieved

Full compliance has been achieved.